

Appl. No. 10/807,050
Amdt. Dated May 18, 2006
Reply to Office Action of February 17, 2006

Amendments to the Drawings

The attached replacement sheets include changes to FIGS. 1-3 and 6. These sheets, which include FIGS. 1-3 and 6, replace the original sheets (page 1 of 6 through page 3 of 6 and page 6 of 6) that included FIGS. 1-3 and 6.

In FIGS. 1-3, the conducting tracks have been added. In FIG. 1, reference numeral 180 designating the housing assembly has been added. In FIG. 6, reference numerals 322 and 325, which were not described in the specification, have been canceled. For each of these changes, there is no new matter entered.

Attachments: Four Replacement Sheets

Appl. No. 10/807,050
Amdt. Dated May 18, 2006
Reply to Office Action of February 17, 2006

Remarks/Arguments

Specification

The specification and Abstract have been reviewed, and numerous amendments have been made thereto. The amendments relate to grammar, informalities, correct English expression, and explicit expression of subject matter that was inherent in the specification and Abstract as originally filed. No new matter is entered.

Claims 1-23 were pending in the present application before the amendment as set forth above. By this Amendment, claims 1-8, 10-19 and 22-23 are amended. Claims 9 and 20-21 are canceled without prejudice.

Drawing Objections

The drawings are objected to under 37 CFR 1.83(a). In response to the objection, applicants have amended the drawings by adding the conducting tracks that were not previously shown. Accordingly, applicants respectfully request that the objection now be withdrawn.

Claim Objections

Claims 2, 3, 8, 10, 13, 14 and 19 are respectively objected to because there seems to be a typo. In response, applicants have amended the claims in order to overcome the respective objections. Accordingly, applicants respectfully request that the objections now be withdrawn.

Claim 2 is also objected to because there seems to be a typo. In response, applicants have amended the claim in order to overcome the objection. Accordingly, applicants respectfully request that the objection now be withdrawn.

Appl. No. 10/807,050
Amdt. Dated May 18, 2006
Reply to Office Action of February 17, 2006

Claim 10 is also objected to because there seems to be a typo. In response, applicants have amended claims 1 and 10, including in order to overcome the objection. In particular, claim 1 now recites "a printed circuit board", and claim 10 now recites "said printed circuit board". Accordingly, applicants respectfully request that the objection now be withdrawn.

Claim Rejections under 35 U.S.C. 102

Claims 1, 2, 9, 11, 12 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Higdon et al. (US 6,148,183).

In response to the rejections, applicants have amended independent claims 1 and 11 in order to patentably define the claimed invention over the art cited by Examiner. Applicants assert that the rejected claims are now patentable, as follows:

Regarding claim 1, the present invention in pertinent part recites an electronic device comprising: "a housing assembly comprising a side wall; a printed circuit board received in the housing assembly; and a side key assembly engaged with the side wall, and comprising: a key portion; a flexible panel having domes formed thereon and corresponding to the key portion; and a flexible printed circuit board having conducting tracks formed thereon, the flexible printed circuit board being fixed to and electrically connecting with said printed circuit board; wherein the flexible panel is arranged between the key portion and the flexible printed circuit board, and each dome corresponds to an end of at least one respective of the conducting tracks; and when the key portion is depressed, it exerts a force and presses the flexible panel, in response to this pressure one of the domes on the flexible panel deforms toward the flexible printed circuit board to actuate the corresponding at least one conducting track on the flexible printed circuit board".

Appl. No. 10/807,050
Amdt. Dated May 18, 2006
Reply to Office Action of February 17, 2006

The flexible printed circuit board is fixed to and electrically connects with the printed circuit board, which simplifies the structure of the housing and reduces the risk of ambient air or contamination adversely affecting the electrical connection between the flexible printed circuit board and the printed circuit board.

In contrast, as shown in FIGS. 2, 3 and 5 of Higdon et al. and understood by applicants, Higdon et al. disclose an electronic device including a substrate 257, a circuit panel subassembly 210, a set of contact pads 204 and a set of contact arms 202. The circuit panel subassembly 210 includes a circuit 236 defined thereon. The contact arms 202 are coupled to the circuit 236 of the circuit panel subassembly 210. The contact pads 204 are carried on the substrate 257 and abut with the contact arms 202 in order to electrically connect the substrate 257 with the circuit panel subassembly 210. Hence, the electrical connection between the substrate 257 and the circuit panel subassembly 210 is actualized by the contact arms 202 and the contact pads 204. Therefore, Higdon et al. fail to disclose or suggest a flexible circuit board which is fixed to and electrically connects with a printed circuit board.

In addition, in Higdon's invention, it is the contact pads 204 abutting with the contact arms 202 to electrically connect the substrate 257 with the circuit arms 20. Therefore, firstly, the structure of Higdon's invention is complicated; and secondly, since the contact pads 204 and the contact arms 202 are exposed to ambient air and are liable to be affected by oxidation, the electrical connection between the contact pads 204 and the contact arms 202 would be adversely affected as a result.

In conclusion, Higdon et al. fail to disclose, teach or suggest the present invention as set forth in claim 1. Accordingly, applicants submit that claim 1, as amended, is novel, unobvious and patentable over Higdon et al. under both 35

Appl. No. 10/807,050
Amdt. Dated May 18, 2006
Reply to Office Action of February 17, 2006

U.S.C. 102(b) and 35 U.S.C. 103. Reconsideration and withdrawal of the rejection and allowance of claim 1 are respectfully requested.

Claim 2 directly depends from claim 1. Therefore reconsideration and withdrawal of the rejection, and allowance of claim 2, are also respectfully requested.

Regarding claim 9, applicants have canceled claim 9 without prejudice. Therefore the rejection of claim 9 is now moot.

Regarding claim 11, the present invention in pertinent part recites a side key assembly for a housing of an electronic device comprising: "a key portion; a flexible panel having domes formed thereon and corresponding to the key portion; and a flexible printed circuit board having conducting tracks formed thereon, the flexible printed circuit board configured for being fixed to and electrically connecting with a printed circuit board of the electronic device; wherein the flexible panel is arranged between the key portion and the flexible printed circuit board, and each dome corresponds to an end of at least one respective of the conducting tracks; and when the key portion is depressed, it exerts a force and presses the flexible panel, in response to this pressure the flexible panel deforms generally toward the flexible printed circuit board to actuate at least one of the conducting tracks on the flexible printed circuit board". The flexible printed circuit board is configured for being fixed to and electrically connecting with the printed circuit board, which simplifies the structure of the housing and reduces the risk of ambient air or contamination adversely affecting the electrical connection between the flexible printed circuit board and the printed circuit board.

In contrast, as shown in FIGS. 2, 3 and 5 of Higdon et al. and understood by applicants, Higdon et al. disclose an electronic device including a substrate 257, a

Appl. No. 10/807,050
Amdt. Dated May 18, 2006
Reply to Office Action of February 17, 2006

circuit panel subassembly 210, a set of contact pads 204 and a set of contact arms 202. The circuit panel subassembly 210 includes a circuit 236 defined thereon. The contact arms 202 are coupled to the circuit 236 of the circuit panel subassembly 210. The contact pads 204 are carried on the substrate 257 and abut with the contact arms 202 in order to electrically connect the substrate 257 with the circuit panel subassembly 210. Hence, the electrical connection between the substrate 257 and the circuit panel subassembly 210 is actualized by the contact arms 202 and the contact pads 204. Therefore, Higdon et al. fail to disclose or suggest a flexible circuit board which is configured for being fixed to and electrically connecting with a printed circuit board.

In addition, in Higdon's invention, it is the contact pads 204 abutting with the contact arms 202 to electrically connect the substrate 257 with the circuit arms 20. Therefore, firstly, the structure of Higdon's invention is complicated; and secondly, since the contact pads 204 and the contact arms 202 are exposed to ambient air and are liable to be affected by oxidation, the electrical connection between the contact pads 204 and the contact arms 202 would be adversely affected as a result.

In conclusion, Higdon et al. fail to disclose, teach or suggest the present invention as set forth in claim 11. Accordingly, applicants submit that claim 11, as amended, is novel, unobvious and patentable over Higdon et al. under both 35 U.S.C. 102(b) and 35 U.S.C. 103. Reconsideration and withdrawal of the rejection and allowance of claim 11 are respectfully requested.

Claims 12 and 13 directly or indirectly depend from claim 11. Therefore reconsideration and withdrawal of the rejection, and allowance of claims 12 and 13, are also respectfully requested.

Claim Rejections under 35 U.S.C. 103

Page 25 of 30

Appl. No. 10/807,050
Amdt. Dated May 18, 2006
Reply to Office Action of February 17, 2006

Claims 3-8, 10 & 14-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higdon et al. (US 6,148,183) in view of Stopperan (US 5,428,190).

In response to the rejections, applicants now respectfully traverse as follows:

Regarding claims 3-8 and 10, applicants refer to and rely upon the above assertions regarding patentability of claim 1 over Higdon et al. under 35 U.S.C. 102 and 35 U.S.C. 103. Stopperan does not provide any additional teaching to the teachings of Higdon et al. which might assist one of ordinary skill in the art to provide the housing of the amended claim 1. That is, amended claim 1 is submitted to be unobvious and patentable over Higdon et al. in view of Stopperan. Claims 3-8 and 10 directly or indirectly depend from claim 1. Accordingly, dependent claims 3-8 and 10 should also be patentable under 35 U.S.C. 103 over Higdon et al. in view of Stopperan.

Therefore reconsideration and withdrawal of the rejection, and allowance of claims 3-8 and 10, are respectfully requested.

Regarding claims 14-19, applicants refer to and rely upon the above assertions regarding patentability of claim 11 over Higdon et al. under 35 U.S.C. 102 and 35 U.S.C. 103. Stopperan does not provide any additional teaching to the teachings of Higdon et al. which might assist one of ordinary skill in the art to provide the side key assembly of the amended claim 11. That is, amended claim 11 is submitted to be unobvious and patentable over Higdon et al. in view of Stopperan. Claims 14-19 indirectly depend from claim 11. Accordingly, dependent claims 14-19 should also be patentable under 35 U.S.C. 103 over Higdon et al. in view of Stopperan.

Appl. No. 10/807,050
Amdt. Dated May 18, 2006
Reply to Office Action of February 17, 2006

Therefore reconsideration and withdrawal of the rejection, and allowance of claims 14-19, are respectfully requested.

Regarding claims 20 and 21, applicants have canceled these claims without prejudice. Therefore the rejection of claims 20 and 21 is now moot.

Regarding claim 22, the present invention in pertinent part recites an electronic device comprising: "a housing assembly comprising a side wall; a printed circuit board mounted in the housing assembly; and a side key assembly engaged with the side wall, and comprising: a key portion; a flexible panel substantially abutting against the key portion; and a flexible printed circuit board having conducting tracks formed thereon, the flexible printed circuit board being fixed to and electrically connecting with said printed circuit board; wherein the flexible panel is arranged between the key portion and the flexible printed circuit board; and when the key portion is depressed, it exerts a force and presses the flexible panel, in response to this pressure the flexible panel deforms toward the flexible printed circuit board to actuate at least one conducting track on the flexible printed circuit board". The flexible printed circuit board is fixed to and electrically connects with the printed circuit board, which simplifies the structure of the housing and reduces the risk of ambient air or contamination adversely affecting the electrical connection between the flexible printed circuit board and the printed circuit board.

In contrast, as shown in FIGS. 2, 3 and 5 of Higdon et al. and understood by applicants, Higdon et al. teaches an electronic device including a substrate 257, a circuit panel subassembly 210, a set of contact pads 204 and a set of contact arms 202. The circuit panel subassembly 210 includes a circuit 236 defined thereon. The contact arms 202 are coupled to the circuit 236 of the circuit panel

Appl. No. 10/807,050
Amdt. Dated May 18, 2006
Reply to Office Action of February 17, 2006

subassembly 210. The contact pads 204 are carried on the substrate 257 and abut with the contact arms 202 in order to electrically connect the substrate 257 with the circuit panel subassembly 210. Hence, the electrical connection between the substrate 257 and the circuit panel subassembly 210 is actualized by the contact arms 202 and the contact pads 204. Therefore, Higdon et al. fail to teach or suggest a flexible circuit board which is fixed to and electrically connects with a printed circuit board.

In addition, in Higdon's invention, it is the contact pads 204 abutting with the contact arms 202 to electrically connect the substrate 257 with the circuit arms 20. Therefore, firstly, the structure of Higdon's invention is complicated; and secondly, since the contact pads 204 and the contact arms 202 are exposed to ambient air and are liable to be affected by oxidation, the electrical connection between the contact pads 204 and the contact arms 202 would be adversely affected as a result.

Applicants acknowledge that Stopperan teaches a flexible printed circuit board coupled with an electrical panel by means of hot pressing. However, Stopperan does not provide any additional teaching to the teachings of Higdon et al. which might assist one of ordinary skill in the art to provide the housing of the amended claim 22. Therefore, amended claim 22 is submitted to be unobvious and patentable over Higdon et al. in view of Stopperan.

In conclusion, applicants assert that amended independent claim 22 is patentable under 35 U.S.C. 103 over Higdon et al. in view of Stopperan. Reconsideration and withdrawal of the rejection and allowance of claim 22 are respectfully requested.

Claim 23 directly depends from claim 22. Therefore reconsideration and withdrawal of the rejection, and allowance of claim 23, are also respectfully

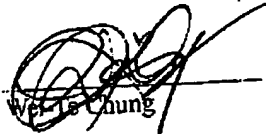
Appl. No. 10/807,050
Amdt. Dated May 18, 2006
Reply to Office Action of February 17, 2006

requested.

In view of the above remarks, the subject application is believed to be in a condition for allowance, and an action to such effect is earnestly solicited.

Appl. No. 10/807,050
Amtd: Dated May 18, 2006
Reply to Office Action of February 17, 2006
Respectfully submitted,
HSU ET AL.

By


Wei-Chung

Registration No.: 43,325
Foxconn International, Inc.
P.O. Address: 1650 Memorex Drive, Santa Clara, CA 95050
Tel. No.: (408) 919-6137

Appl. No. 10/807,050
Amdt. Dated May 18, 2006
Reply to Office Action of February 17, 2006

Marked-Up Version of a Substitute Specification

HOUSING OF ELECTRONIC DEVICE WITH A SIDE KEY ASSEMBLY

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The present invention relates to ~~a housing of~~ an electronic device, and especially to ~~a housing of~~ a portable electronic device with a side key assembly.

Description of the Related Art

[0002] Many electronic devices such as mobile phones have a housing with an interior compartment for receiving a printed circuit board therein. For the sake of convenience, a mobile phone usually ~~sets~~ has a side key ~~switch~~ switch set on an outside sidewall of the housing, ~~so that the~~ Thereby, a user can operate the electronic device by using a single finger to finish receiving a call, ~~opening~~ turn on a ~~background light~~ backlight, ~~adjusting~~ adjust a volume, or ~~rolling~~ scroll a menu. Generally, the switch or a portion thereof is located on the circuit board which is mounted within the housing. A button or similar actuator is situated on an outside sidewall of the housing such that an interface portion of the button or similar actuator is externally accessible to a user. ~~And an~~ A contact portion is positioned adjacent to the switch. When the user depresses the interface portion, the contact portion engages and actuates the switch.

[0003] A device of this type ~~is known~~ can be found, for example, ~~from~~ in U.S. Pat. No. 5,749,457, ~~as~~ key aspects of which are shown in FIGS. 4 and 5 hereof. This patent discloses an electronic device 100 including a plurality of side keys 200. Each side key 200 includes an actuator button 210 and a shaft 220. The button 210 is made of resilient and elastic material in a one-piece construction,

Appl. No. 10/807,050
Amdt. Dated May 18, 2006
Reply to Office Action of February 17, 2006

and includes an externally accessible user interface portion 211, an internally positioned actuator member 212, and a wall portion 214. The button 210 is anchored to a housing member of the electronic device ~~200~~ 100 by the way of a wall portion 214 ~~anchoring~~ being anchored to the shaft 220.

[0004] In operation, force is applied to the user interface 211 of the button 210 in a direction 202 which is substantially orthogonal ~~or 90 degrees, from to~~ the direction of actuation 201 of the switch 232 on a circuit chip 230. The ~~actuator~~ button 210 is responsive to the force exerted in a direction normal to the user interface surface 211, to pivot the actuator member 212. As a result, the actuator member 212 exerts an actuating force on the switch member 232. When a force is applied to the user interface surface 211, the actuator member 212 pivots until the an actuator surface 216 thereof engages with the switch member 232. Thus, the actuator member 212 pivots such that it exerts a corresponding force on the switch member 232 at a certain angle with regard to the direction of the force exerted on the user interface surface 211. However, ~~in the prior art,~~ the side key 200 is ~~reposed~~ repositioned by way of a spring bias return force exerted by the shaft 220, the bias return force being exerted once ~~suffered from~~ the actuator member 212 ~~pivots~~ has finished pivoting. When exerting a greater force ~~to is~~ exerted on the button 210, the shaft 220 provides greater spring bias return force for the interface portion 211 and actuator member 212. This makes the button 210 drift off the position where it should return to. ~~To~~ In addition, to assure that the key button 210 cooperates with the switch 232 well, the distance between the wall portion 214 and the switch 232 should not be too small. ~~But~~ However, ~~where and place the shaft 220 located is in charged to the distance, this is not easy to control and the shaft 220 becomes~~ is liable to become fatigued and unstable after frequent usage, and this leads to a change of the distance between the wall

Appl. No. 10/807,050
Amdt. Dated May 18, 2006
Reply to Office Action of February 17, 2006

portion 214 and the switch 232. When this happens, the actuator member 212 may contact the switch 232 even when there is no force applied to the user interface 211.

[0005] In ~~another~~ other prior art, referring to FIG 6, a side mounted key assembly ~~300 is provided.~~ This kind of key assembly is disclosed in US. Pat. No. 6,166,337. The side key assembly 300 includes a key portion 310 and a movable contact portion 320. The key portion 310 has a movable key portion 312 and a movable contact actuator portion 314 cooperating with the movable key portion 312 and cooperating with the movable contact portion 320. The contact actuator portion 314 has the form of a cone rounded off near ~~to the~~ a free end 323 thereof. The movable contact portion 320, ~~near to~~ has a free end 328 and a surface 327 at the free end 328, thereof and The free end 328 is near to the free end 323 of the contact actuator portion 314, has a and the surface 327 that is oriented at an oblique angle relative to the a direction of movement P of the contact actuator portion 314. The key portion 310 and the contact portion 320 cooperate with an elastic carrier plate 17, which includes a first part 316, a second part 326, and a third part 324. In operation, force is ~~applied~~ applied to the movable key portion 312 in the direction P, and the movable key portion 312 is responsive to the force exerted in a direction normal to and moves the contact actuator portion 314. The contact actuator portion 314 moves ~~tilt it's~~ until the free end 323 biases to the surface 327 of the movable contact portion 320. The movable contact portion 320 moves in the direction Q ~~towards the~~ toward a printed circuit board(not labelled) board (not labeled). When the force is ~~eliminated~~ removed, the movable contact portion 320 is ~~reposited~~ repositioned by a return force that the third part 324 provides. However, the movable contact portion 320 is not only ~~suffer from~~ sustains a perpendicular force in perpendicularity, but also ~~suffer from~~ sustains a

Appl. No. 10/807,050
Amdt. Dated May 18, 2006
Reply to Office Action of February 17, 2006

~~horizontal~~ force ~~in horizontal~~. The horizontal force ~~in horizontal~~ makes the movable contact portion 320 drift off position. This adversely affects the performance of the side key assembly 300 ~~when it works in operation~~.

[0006] Therefore, an improved ~~housing of side key assembly~~ for an electronic device ~~with a side key assembly~~ having a simple structure, easy assembly and stable performance is desired.

SUMMARY OF THE INVENTION

[0007] Accordingly, an object of the present invention is to provide a ~~housing of~~ an electronic device with a side key assembly having a simple structure, easy assembly and stable performance.

[0008] To achieve the above object, a ~~housing of~~ an electronic device ~~with a side key assembly comprises~~ includes a housing assembly, a printed circuit board, and a side key assembly. The housing assembly includes a side wall. The side key assembly comprises a key portion, a flexible panel, and a flexible printed circuit board. The flexible printed circuit board has conducting tracks formed thereon. The flexible panel ~~locates~~ is located between the flexible printed circuit board and the key portion, and has domes defined thereon. When a force is applied to the key portion, the depressed key portion exerts a force to the flexible panel until one of the domes contacts ~~to~~ the flexible printed circuit board and actuates the conducting tracks formed thereon.

[0009] In a ~~preferred~~ preferred embodiment, two stop walls extend from an inner side of the side wall. Each stop wall ~~is in a~~ has an "L" shape, and ~~confronts~~ to the stop walls confront each other near ~~to~~ the inner side of the side wall. There is a recess formed in the side wall corresponding with the ~~two~~ stop walls. A

Appl. No. 10/807,050
Amdt. Dated May 18, 2006
Reply to Office Action of February 17, 2006

receiving space is defined in the side wall between the recess and the two stop walls. The side key assembly is located in the receiving space.

~~[00010]~~ [0010] Other objects, advantages and novel features of the present invention will be apparent from the following detailed description of preferred embodiments thereof with reference to the attached drawings, in which:

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] FIG. 1 is an exploded, perspective view of a housing ~~with assembly, a printed circuit board, and~~ a side key assembly of an electronic device of the present invention;

[0012] FIG. 2 is an assembled view of the housing with a assembly, printed circuit board, and side key assembly shown in FIG. 1;

[0013] FIG. 3 is ~~a partially~~ an enlarged view of the side key an encircled ~~portion in III of the FIG. 2, showing part of the side key assembly;~~

[0014] FIG. 4 is an exploded view of a conventional housing with a side keys assembly; key assembly;

[0015] FIG. 5 is ~~a fragmentary~~ an enlarged, cross-sectional view of the housing of the FIG. 4 when assembled; and

[0016] FIG. 6 is a cross-sectional view of another conventional housing with a side key assembly.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0017] ~~FIG. 1~~ FIG. 1 shows ~~a housing 100 of an electronic device (not shown) with 100, which includes a single~~ side key assembly 200, a housing assembly 180, and a printed circuit board 184. The housing ~~100 comprises~~ assembly 180 includes a side wall 183 and two stop walls 182. ~~A~~ The printed circuit board (not

Appl. No. 10/807,050
Amdt. Dated May 18, 2006
Reply to Office Action of February 17, 2006

~~shown~~) 184 is accommodated in the housing ~~100~~ assembly 180 for providing ~~electrically contact with electronic functioning for~~ the electronic device 100. Each stop wall 182 extends from an inner side (not ~~labeled~~ labeled) of the side wall 183. ~~The two stop walls 182 present inside the housing assembly 180 near to the side wall 183.~~ Each stop wall 182 ~~is in a~~ has an "L" shape, and ~~confronts to the~~ stop walls 182 confront each other near to the inner side of the side wall 183. Each stop wall 182 comprises a long arm 1821 and a short arm 1822. Each long arm 1821 is ~~in~~ parallel to the side wall 183. The two long arms 1821 are aligned each other, with a space (not ~~labeled~~ labeled) defined therebetween. Each short arm 1822 extends from ~~the a~~ a bottom wall (not ~~labeled~~ labeled) of the housing ~~100~~ assembly 180. Two ends of each short arm 1822 are ~~respective~~ respectively near to the inner side of the side wall 183 and the corresponding long arm 1821. The space between the two short arms 1822 is longer than the side key assembly 200. A recess 1831 is formed in the side wall 183 corresponding with the two stop walls 182. A width of the recess 1831 is shorter than the distance between the two short arms 1822. A receiving space 186 is defined in the side wall 183 between the recess 1831 and the two stop walls 182.

[0018] The side key assembly 200 comprises a key portion 120, a flexible panel 140, and an electrical component 160 having an electrical panel 162 and a flexible printed circuit board ~~164~~, 164. The key portion 120 has a body portion 123, and a user interface 122 which protrudes from one face of the body portion 123. The body portion 123 and the user interface 122 define an opening space (not ~~labeled~~ labeled). Two contact portions 124 extend from one inner side of the user interface 122, and are contained in the opening space. The two contact portions 124 are located in two ends of the user interface 122, respectively.

[0019] The flexible panel 140 is a rectangular panel, having a first surface 143

Appl. No. 10/807,050
Amdt. Dated May 18, 2006
Reply to Office Action of February 17, 2006

and a second surface 144. There are two domes 142 located on the second surface 144. Each dome 142 corresponds to each a respective contact portion 124.

[0020] The electrical panel 162 is a rectangular panel with two holes 166 defined therethrough. The flexible printed circuit board 164 is coupled to the electrical panel 162 by means of hot ~~pressure~~ pressing, and two ~~pair~~ pairs of conducting tracks (not labeled) are formed ~~thereon~~ on the flexible printed circuit board 164 and an adjoining portion of the electrical panel 162. One end of each conducting track ~~contacts on the electrical panel 162~~ has ~~[[a]]~~ an electrical contact pointer (not ~~shown~~ labeled) ~~on the electrical panel 162~~, and in each pair of conducting tracks, ~~would the two conducting tracks do~~ not electrically contact each other.

[0021] Referring to FIGS. 2 and 3, in assembly, the electrical component 160, the flexible panel 140 and the key portion 120 are placed into the receiving space 186 in ~~turn~~ that order. Each hole 166 formed ~~on~~ in the electrical panel 162 corresponds to a protruding portion (not ~~shown~~ visible) on each stop wall 182. The protruding portions are received contained in the hole holes 166, for holding the electrical panel 162. The flexible printed circuit board 164 crosses over one long arm 1821 and ~~contacts to~~ is engaged with the printed circuit board 184 ~~built in the housing 100~~ by means of hot ~~pressure~~ pressing. ~~Thereby, so that~~ the conducting tracks ~~defined~~ formed on the ~~two~~ flexible printed circuit boards board 164 can electrically contact ~~each other~~ an electrically conductive portion (not shown) of the printed circuit board 184. The flexible panel 140 ~~locates~~ is located between the ~~electrical~~ electrical component 160 and the key portion 120, and the domes 142 contact ~~with~~ but are not pressed by the contact portions 124 of the key portion 120. The side key assembly 200 is assembled in the receiving

Appl. No. 10/807,050
Amdt. Dated May 18, 2006
Reply to Office Action of February 17, 2006

space 186 of the side wall 183 and locked by the body portion 123. Thereby, the user interface 122 protrudes out from the side wall 183 so that a user can operate it.

[0022] In operation, a force is ~~applied~~ applied to one end of the user interface 122, the contact portion 124 defined thereon is pressed, ~~actuating~~ and the dome 142 ~~corresponding~~ corresponding to the contact portion 124 is actuated. The dome 142 is responsive to the force exerted in a normal direction, ~~normal to contact and contacts~~ the electrical panel 162 and actuates the corresponding pair of electrical pointers on the electrical panel 162. The two conducting tracks ~~corresponding~~ corresponding to the two electrical ~~pointer~~ pointers are responsive to the actuation of the electrical pointers by the dome 142, and electrically ~~conduct~~ with contact the electrically conducting portion (~~not shown~~) of the printed circuit board ~~built in the housing 100~~ 184. Thus ~~[[a]] an electrical signal of~~ corresponding to the operation passes to the printed circuit board ~~in 184 built into~~ the housing ~~100 assembly~~ 180 from the flexible printed circuit board 160. When the force is ~~eliminated~~ removed, the dome 142 is ~~repositioned~~ repositioned by its means of its own elasticity, and the contact portion 124 is returned back to its original position by ~~[[a]] the corresponding~~ return force of the dome 142.

[0023] The apparatus of the present invention utilizes one flexible panel 142 to actuate the electrical ~~pointer~~ pointers to make the signal of the operation pass to the printed circuit board ~~built in 184 built into~~ the housing ~~100 from a assembly~~ 180 via the flexible printed circuit board 164. ~~When In order to reposition the domes 142, there is no additional components to do it, this makes are needed.~~ This enables the apparatus ~~has to have~~ a simple ~~structure~~ structure and stable performance.

[0024] It is ~~understand, there~~ understood that the electrical panel 162 can be

Appl. No. 10/807,050
Amdt. Dated May 18, 2006
Reply to Office Action of February 17, 2006

~~canceled omitted, and in which case~~ the electrical ~~pointer is~~ pointers are formed on the flexible printed circuit board 164 ~~directly~~ directly. This ~~arrangement could~~ arrangement can also achieve the ~~purpers~~ desired purpose.

[0025] It is to be further understood, ~~however,~~ that even though numerous characteristics and advantages of the present invention have been set forth in the foregoing description, together with details of the structure and function of the invention, the disclosure is illustrative only, and changes may be made in detail, especially in matters of shape, size, and arrangement of parts within the principles of the invention to the full extent indicated by the broad general meaning of the terms in which the appended claims are expressed.

Appl. No. 10/807,050
Amdt. Dated May 18, 2006
Reply to Office Action of February 17, 2006

Amendments to the Abstract

Please replace the abstract with the following amended abstract:

~~A housing (100) of an~~ An electronic device (100) ~~with a side key assembly (200) mounted therein~~ includes a housing assembly (180), which includes a side wall (183), a printed circuit board (184) and a side key assembly (200). The side key assembly ~~comprises~~ includes a key portion (120), a flexible panel (140), and a flexible printed circuit board (164). The flexible printed circuit board has conducting tracks formed thereon. The flexible panel ~~locates~~ is located between the flexible printed circuit board and the key portion, and has domes (142) defined thereon. ~~When works~~ In operation, the ~~depressed~~ key portion is depressed and exerts a force to the flexible panel, ~~until~~ and one of the domes ~~contacts to the flexible printed circuit board~~ deforms and actuates the conducting tracks formed ~~thereon on the flexible printed circuit board.~~